

**REMARKS*****Claim Amendments***

After entry of this amendment claims 1-2, 5-11, 16-18, 21-23, 25-29 and 42-47 will be pending and under consideration in the present application. Claims 16, 18 and 44-46 have been amended to improve their form. The amendments do not add any new matter to the specification. Claims 33 and 48 have been cancelled. Applicant reserves the right to pursue any cancelled subject matter in a future application.

***Information Disclosure Statement***

Applicant thanks the Examiner for considering the references cited in the Information Disclosure Statement filed 11/10/04.

***35 U.S.C. §112 Rejections******New Matter Rejection***

Claims 1-2, 5-11, 16-18, 21, 23, 25-29, 33, 42 and 44-48 are rejected as allegedly failing to comply with the written description requirement. The Examiner states that this is a new matter rejection. According to the Examiner, the claims can be read in two ways: "The first way is that applicant is administering a composition comprising Alt-1. . . . The second way is that applicant is administering the anti-anti-idiotypic antibody (or Ab3)." According to the Examiner, if the claims are read in the "second way", the claims contain new matter.

Applicant traverses this rejection, and respectfully submits that the Examiner's reading of the claims is inconsistent with the plain language of the claims. Claims 1-2, 5-11 and 44 recite a method comprising administering "an antibody or antigen binding fragment thereof that binds to an epitope of MUC-1, said epitope being an epitope to which a monoclonal antibody produced by a hybridoma that has ATCC Designation Number PTA-975 specifically binds." (The monoclonal antibody produced by the hybridoma bearing ATCC Designation Number PTA-975 has been designated Alt-1.) Thus, claims 1-2, 5-11 and 44 are directed to a method comprising administering an antibody or antigen binding fragment thereof that binds to the same epitope of

MUC-1 which is specifically bound by Alt-1. These claims are clear and supported by the specification as originally filed. (*See, e.g.*, page 4, lines 4-11; page 10, lines 3-26; page 17, lines 2-4.)

Claim 16 and the claims dependent thereon recite a method comprising administering “an antibody or antigen binding fragment thereof that specifically binds to a first epitope on the multi-epitopic antigen . . . wherein the first epitope is an epitope of MUC-1 to which a monoclonal antibody produced by a hybridoma that has ATCC Designation Number PTA-975 specifically binds.” Claim 18 and the claims dependent thereon recite a method comprising administering “an antibody or antigen binding fragment thereof that specifically binds to a first epitope on the multi-epitopic antigen” wherein the antibody is not a monoclonal antibody selected from a specific group of antibodies. Thus, claims 16-18, 21, 23, 25-29, 42 and 45-47 are also clear and fully supported by the specification as originally filed. (*See, e.g.*, specification page 5, lines 7-11; page 5, line 25 to page 6, line 1; page 13, lines 21-26.)

Claims 33 and 48 have been cancelled thereby obviating the Examiner’s rejection with respect to these claims.

The pending claims are not limited to a method comprising administering either Alt-1 or to an anti-anti-idiotypic antibody which binds to Alt-1. Instead, the claimed methods encompass the use of all antibodies that bind to the same epitope of MUC-1 which is specifically bound by Alt-1. As discussed above, such method is described in the specification as originally filed. Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw this new matter rejection.

#### ***Enablement Rejection***

Claims 1-2, 5-11, 16-18, 21, 23, 25-29, 33, 42 and 44-48 are rejected as allegedly lacking enablement. The Examiner states that “while being enabling for the use of Alt-1 to treat a tumor wherein the mammal generates an immune response to the administration of Alt-1,” the specification “does not reasonably provide enablement for the use of anti-anti-idiotypic antibodies to Alt-1 or other antibodies that bind to the same epitope as Alt-1 to treat tumors.”

The Examiner states that “[c]laim 16 is included in this rejection because of the word ‘therapeutic.’”

Applicant respectfully traverses. Claim 16 has been amended to delete the word “therapeutic” from the claim. Accordingly, this rejection, as applied to claim 16 and the claims dependent thereon, has been addressed.

Applicant respectfully submits that the application *is* enabling for the use of antibodies that bind to the same epitope as Alt-1 to treat tumors. An application satisfies the enablement requirement if one skilled in the art, after reading the disclosure, could practice the claimed invention without undue experimentation. “[T]he question of undue experimentation is a matter of degree. The fact that some experimentation is necessary does not preclude enablement; what is required is that the amount of experimentation ‘must not be unduly extensive.’” *PPG Indus., Inc. v. Guardian Indus., Corp.*, 75 F.3d 1558, 1564 (Fed. Cir. 1996) (citation omitted). Undue experimentation “is not a single, simple factual determination, but rather is a conclusion reached by weighing many factual considerations.” *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1985). These factual considerations include “(1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims.” *Id.*

MPEP 2164.01 requires that the Examiner carefully consider each of these eight factors when making an enablement rejection. More specifically, MPEP 2164.01(a) states that “[i]t is improper to conclude that a disclosure is not enabling based on an analysis of only one of the above factors while ignoring one or more of the others. The examiner's analysis must consider all the evidence related to each of these factors, and any conclusion of no enablement must be based on the evidence as a whole.” Applicant submits that the Examiner has failed to apply each of the eight factors.

The claimed invention relates to the use of monoclonal antibodies that bind to the same epitope of MUC-1 as Alt-1 to treat cancer. Thus, the scope of the claim is relatively narrow. The state of the art of making monoclonal antibodies at the time that the application was filed was advanced. At the time that the application was filed a person of skill in the art was very familiar with the art of making monoclonal antibodies. Accordingly, a person of skill in the art could

reliably predict that antibodies binding to the same epitope of MUC-1 as Alt-1 could be made, and that such antibodies would have the same function as Alt-1 antibodies. Moreover, the application provides guidance regarding how such antibodies can be made. (*See, e.g.*, page 11, lines 26 to page 12, line 19 and page 16, lines 17.) Thus, when the evidence is considered as a whole, the fact that the specification shows the treatment of tumors using Alt-1 does not indicate that the claims should be limited to the use of Alt-1 to treat tumors. *See generally, Hybritech Inc., v. Monoclonal Antibodies, Inc.* 231 U.S.P.Q. 81 (Fed. Cir. 1986) (finding that making monoclonal antibodies by the hybridoma process taught by Milstein and Kohler as well as screening methods to identify antibodies possessing certain desired characteristics was well known in the art and did not constitute undue experimentation for a person skilled in the art of antibodies).

Applicant respectfully submits that once the epitope which is bound by an antibody is identified, it is at most a matter of routine experimentation to create other monoclonal antibodies that bind to the same epitope. Accordingly, since the epitope which is bound by Alt-1 has been identified, it would at most be a matter of routine experimentation to make other antibodies that bind to the same epitope as Alt-1. Further, antibodies which bind to the same epitope as Alt-1 are expected to have similar function to Alt-1.

In view of these arguments, Applicant requests that the Examiner reconsider and withdraw this rejection.

### ***Indefiniteness Rejections***

Claim 16 is rejected as indefinite. The Examiner alleges that the term "immune response" has no proper antecedent basis. As suggested by the Examiner, claim 16 has been amended to replace the term "immune response" with "antibodies." The Examiner also alleged that the term "the antigen" has no antecedent basis. As suggested by the Examiner, the term "multi-epitopic" has been inserted between "the" and "antigen." Finally, the Examiner alleges that "it is not clear what the 'therapeutic composition' is therapeutic for." Applicant traverses this portion of the rejection, but in order to expedite prosecution, Applicant has deleted the word "therapeutic" from the claim. Accordingly, these rejections have been overcome.

Claim 18 is rejected as indefinite based on the allegation that "it is not clear if the 'second epitope' can have some of the same amino acids as the first epitope or if the second epitope is completely different from the first." Applicant traverses this rejection. Claim 18 requires the administration of an antibody or antigen binding fragments that specifically binds to a first epitope on a multi-epitopic antigen and which generates an immune response against a second epitope on the multi-epitopic antigen. The specification defines an epitope as "a portion of an antigen which is bound under physiological conditions by, e.g., a binding agent according to the invention." Accordingly, it is clear that the first and second epitopes must be different, and Applicant respectfully requests that the Examiner reconsider and withdraw this rejection.

Claims 44-46 are rejected as indefinite. The Examiner objects to the term "the carbohydrate and peptide amino acid sequence" stating that the recited sequence only recites amino acids and no carbohydrates. Claims 44-46 have been amended to recite an epitope which consists of carbohydrate and a specified peptide amino acid sequence. Accordingly, this rejection has been obviated.

#### ***Double Patenting Rejection***

Claims 1-2, 5-11, 18, 21-23, 25-29, 33 and 43-48 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3, 5-16 and 28-29 of U.S. Patent No. 6,716,966.

Applicant's attorneys submit herewith a Terminal Disclaimer on behalf of the Assignee of the instant application over the claims of U.S. Patent No. 6,716,966 (AREX-P01-002). Applicant respectfully requests reconsideration and withdrawal of the rejection.

#### ***35 U.S.C. §102 Rejection***

Claims 33 and 48 are been rejected under 35 U.S.C. §102. Claims 33 and 48 have been cancelled. Accordingly, this rejection has been obviated.

***Conclusion***

In view of the above amendment, Applicant believes the pending application is in condition for allowance.

If an additional fee is due, please charge our Deposit Account No. 18-1945, from which the undersigned is authorized to draw under Order No. AREX-P03-002.

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Respectfully submitted,

By   
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